
Subject: What is 'iadj' and 'iend' in TRIANGULATION?

Posted by [Karlo Janos](#) on Wed, 01 Oct 2008 14:14:41 GMT

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Hello all!

I'd like to use IDL's function TRIANGULATION for determining the nearest neighbor on the surface of a sphere. Unfortunately the keyword 'CONNECTIVITY' doesn't work together with 'SPHERE'. But I found in the struct of SPHERE the fields 'iadj' and 'iend'. What do they mean? I did not find any explanation about this struct.

Best regards

Karlo

Subject: Re: What is 'iadj' and 'iend' in TRIANGULATION?

Posted by [Spon](#) on Fri, 03 Oct 2008 13:33:57 GMT

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On Oct 1, 3:14 pm, "Karlo Janos" <idl.20.beam...@spamgourmet.com> wrote:

> Hello all!

>

> I'd like to use IDL's function TRIANGULATION for determining the
> nearest neighbor on the surface of a sphere. Unfortunately the keyword
> 'CONNECTIVITY' doesn't work together with 'SPHERE'. But I found in the
> struct of SPHERE the fields 'iadj' and 'iend'. What do they mean? I did
> not find any explanation about this struct.

> Best regards

>

> Karlo

Hi Karlo,

The output of the SPHERE keyword is designed to be passed to the TRIGRID function. The TRIANGULATE helpfile states that 'The structure contains the 3D Cartesian locations sample points and the adjacency list that describes the triangulation.', so I'm guessing .iadj and .iend are fields that contain information about the adjacency list. Have a look at Example 2 in the TRIGRID helpfile.

If you want to find out what the arrays in these structure fields actually _mean_, then I'm afraid I'm no use to you! :-/

Regards,
Chris

Subject: Re: What is 'iadj' and 'iend' in TRIANGULATION?
Posted by [Karlo Janos](#) on Sat, 04 Oct 2008 11:16:04 GMT
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> The output of the SPHERE keyword is designed to be passed to the
> TRIGRID function. The TRIANGULATE helpfile states that 'The structure
> contains the 3D Cartesian locations sample points

Indeed, that's easy to understand, because the field is called ".XYZ".

> and the adjacency
> list that describes the triangulation.', so I'm guessing .iadj
> and .iend are fields that contain information about the adjacency
> list.
> If you want to find out what the arrays in these structure fields
> actually _mean_, then I'm afraid I'm no use to you! :-/

That is the point. I want to know how to interpret the numbers in these structure fields .IADJ (sounds like adjacency) and .IEND (no idea what that means). But it does not seem to be the same principle as if I would use the CONNECTIVITY keyword to get the adjacency list in planar gridding (there is nothing like .IEND).
Thanks for your guess!

Karlo

Subject: Re: What is 'iadj' and 'iend' in TRIANGULATION?
Posted by [Karlo Janos](#) on Mon, 06 Oct 2008 14:36:16 GMT
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Well, here is the solution for my problem.
Look at the declaration of the SUBROUTINE TRMESH in
<http://www.netlib.org/toms/623> or <http://www.netlib.org/toms/624>.
There you find the definition for IADJ and IEND.
But: The indices contained in IADJ and IEND are not zero-based! Even in the struct used in IDL. That's a little bit confusing. So you have to correct for that, when you use these fields for a different purpose than for TRIGRID.
Greetings

Karlo
